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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,849	10/29/2003	Akiho Yoshizawa	259052003700	8063

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EXAMINER

ALUNKAL, THOMAS D

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/696,849

Applicant(s)

YOSHIZAWA, AKIHO

Examiner

Thomas D. Alunkal

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/10/06, 10/29/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,4,7-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al (**U.S. 6,208,610**), in view of Henderson et al (**U.S. 4,844,614**).

Regarding **Claims 1,4,7-11**, Kawakami et al. teach:

An optical pickup device comprises at least (**see Abstract**):

- a housing (**see Column 7, lines 63-67**)
- a beam splitter fixed to a beam splitter attachment position of the housing by an adhesive so that a splitter optical axis matches a design optical axis (**see Column 8, lines 2-7**)
- a diffraction mirror attached to the housing for reflecting light from the beam splitter (**see Column 6, lines 23-25 and Figure 4, Element 23**)
- applying an adhesive to a beam splitter attachment position of a housing (**see Column 8, lines 3-7**)
- mounting the beam splitter in a temporarily positioned state at the beam splitter attachment position via the adhesive (**see Column 8, lines 3-7**)
- detecting light projected to the beam splitter and reflected by a reflection surface of the beam splitter (**see Figure 6, Element 26**)

- allowing light projected to and reflected from a diffraction mirror to enter the beam splitter, allowing the light reflected by a reflection surface of the beam splitter to be emitted to a reflection mirror, allowing backlight reflected by the reflection mirror to be reflected by the beam splitter, allowing the light reflected by the beam splitter to be reflected by the diffraction mirror and detecting the light reflected by the diffraction mirror (**see Figure 6, Elements 23-26**)
- a supporting part for supporting a housing (**see Figure 4**)
- a projector for projecting light to a beam splitter which is mounted in a temporary positioned state at a beam splitter attachment position of the housing via an adhesive (**see Figure 6, Element 21**)
- a reflected light detector for detecting light projected from the projector and reflected by a reflection surface of the beam splitter (**see Figure 6, Element 26**)
- a projector for projecting light via a diffraction mirror to a beam splitter mounted in a temporary positioned state at a beam splitter attachment position of the housing via an adhesive (**see Figure 6, Elements 21 and 23**)
- a reflection mirror for reflecting toward the beam splitter light projected from the projector, diffracted by the diffraction mirror, incident on the beam splitter and reflected by a reflection surface of the beam splitter (**see Figure 6, Element 25**)

- a backlight detector provided integrally with the projector for detecting backlight transmitted from the reflection mirror via the beam splitter and the diffraction mirror (**see Figure 6, Element 26**)

Kawakami et al do not teach:

- housing has a temporary positioning projection for temporarily positioning the beam splitter in/around the beam splitter attachment position by abutting the beam splitter, and in the beam splitter attachment position, a plurality of through holes for inserting therein a plurality of projection sticks which are movable toward/apart from an attachment surface of the beam splitter while the beam splitter is abutting the temporarily positioning projection and the adhesive is uncured
- adjusting an angle of an attachment surface of the beam splitter in a state where the adhesive is uncured, wherein in the step (C1), the angle of the attachment surface of the beam splitter is adjusted so that a beam splitter optical axis matches a design optical axis by inserting projection sticks in through holes formed in the beam splitter attachment position of the housing and moving each of the projection sticks toward/apart from the attachment surface
- a beam splitter angle adjusting unit for adjusting the angle of an attachment surface of the beam splitter in a state where the adhesive is uncured, wherein the beam splitter angle adjusting unit has projection sticks inserted in through holes formed in the beam splitter attachment position of the housing and

move toward/apart from the attachment surface of the beam splitter, for adjusting the angle of the attachment surface so that a beam splitter optical axis matches a design optical axis

However, Henderson et al teach:

- housing has a temporary positioning projection for temporarily positioning the beam splitter in/around the beam splitter attachment position by abutting the beam splitter, and in the beam splitter attachment position, a plurality of through holes for inserting therein a plurality of projection sticks which are movable toward/apart from an attachment surface of the beam splitter while the beam splitter is abutting the temporarily positioning projection and the adhesive is uncured (**see Column 2, lines 9-20, lines 50-54 and Figure 10, Elements 72-74**)
- adjusting an angle of an attachment surface of the beam splitter in a state where the adhesive is uncured, wherein in the step (C1), the angle of the attachment surface of the beam splitter is adjusted so that a beam splitter optical axis matches a design optical axis by inserting projection sticks in through holes formed in the beam splitter attachment position of the housing and moving each of the projection sticks toward/apart from the attachment surface (**see Column 2, lines 9-20, lines 50-54 and Figure 10, Elements 72-74**)
- a beam splitter angle adjusting unit for adjusting the angle of an attachment surface of the beam splitter in a state where the adhesive is uncured, wherein

the beam splitter angle adjusting unit has projection sticks inserted in through holes formed in the beam splitter attachment position of the housing and move toward/apart from the attachment surface of the beam splitter, for adjusting the angle of the attachment surface so that a beam splitter optical axis matches a design optical axis (see **Column 2, lines 9-20, lines 50-54 and Figure 10, Elements 72-74**)

One of ordinary skill in the art at the time of the invention would have been motivated to combine the above teachings of Kawakami et al to the teachings of Henderson et al. Both Kawakami et al and Henderson et al disclose inventions in which the position of a beam splitter is precisely positioned. In **Column 4, lines 58-63**, Kawakami et al disclose the need to remove stray light components produced when a light beam outgoing from the light source is passed through a beam splitter for enabling the light beam incident thereon via object lens to be detected correctly by a photo detector. Thus, one of ordinary skill in the art at the time of the invention would have found it advantageous to combine Henderson et al's teachings with that of Kawakami et al since Henderson et al discloses means for both easily and precisely positioning the beam splitter, resulting in the proper split and recombination of light (see **Column 2, lines 50-53, lines 57-61**) that can be correctly detected by a photodetector.

Claims 2-3,5-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al (**U.S. 6,208,610**) and Henderson et al (**U.S. 4,844,614**), as applied to **Claims 1,4,7-11** above, and further in view of Sipotz, Jr. (**U.S. 5,903,394**).

Regarding **Claims 2-3,5-6**

See teachings of Kawakami et al and Henderson et al above regarding Claim 1.

Henderson et al teach:

- the through holes comprise three through holes provided in positions of three vertexes of an almost equilateral triangle around the adhesive housing recess in the beam splitter attachment position of the housing (**see Figure 2,**

Elements 72-74)

- the through holes comprise two through holes provided in positions of two vertexes of an almost equilateral triangle around the adhesive housing recess in the beam splitter attachment position of the housing, and a projection for supporting the attachment surface of the beam splitter is provided in a position of the remaining one vertex of the equilateral triangle (**see Figure 2,**

Elements 72-74)

Kawakami et al and Henderson et al do not teach:

- the housing has, in its beam splitter attachment position, an adhesive housing recess for housing an adhesive and a reserve recess communicated with the adhesive housing recess for receiving an uncured adhesive overflowed from the housing recess by being pressed by the beam splitter

- wherein the adhesive housing recess is disposed almost in the center of the beam splitter attachment position of the housing, and the through holes are disposed around the adhesive housing recess

However, Sipotz, Jr. teaches:

- the housing has, in its beam splitter attachment position, an adhesive housing recess for housing an adhesive and a reserve recess communicated with the adhesive housing recess for receiving an uncured adhesive overflowed from the housing recess by being pressed by the beam splitter (**see Column 3, lines 13-23 and Figure 2, Element 72**)
- wherein the adhesive housing recess is disposed almost in the center of the beam splitter attachment position of the housing, and the through holes are disposed around the adhesive housing recess (**see Figure 2, Element 66**)

One of ordinary skill in the art at the time of the invention would have been motivated to combine the above teachings of Kawakami et al and Henderson et al to the teachings of Sipotz, Jr. Sipotz, Jr.'s invention is in the same field of endeavor as both Kawakami et al and Henderson et al (i.e. means for maintaining measurement accuracy in an optical system through control of a beam splitter (**see Sipotz, Jr. Column 1, lines 40-46**)). Additionally, in **Column 1, lines 52-54**, Henderson et al disclose the need to protect the beam splitter from both moisture and dust. In **Column 2, lines 52-60**, Sipotz, Jr. discloses the use of a dry purge gas in the beam housing to reduce buildup, which can build on

the beam splitter. Thus, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the teachings of Kawakami et al and Henderson et al to the teachings of Sipotz, Jr. since Sipotz, Jr. efficiently controls the buildup problem disclosed by Henderson et al, which in turn saves costs that occur when beam splitters are replaced and realigned (**see Sipotz, Jr. Column 1, lines 26-37**). Therefore, the invention as a whole is prima facie obvious to one of ordinary skill in the art at the time the invention was made, especially in the absence of evidence to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Alunkal whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shanon Foley can be reached on (571)272-0898. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

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800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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